

A systematic study of *Eonympha* Meyrick in the world (Lepidoptera: Oecophoridae)

WANG Shu-Xia, LI Hou-Hun

(Department of Biology, Nankai University, Tianjin 300071, China)

Abstract: The present paper describes two new species of the genus *Eonympha* from China: *Eonympha fanjingshana* Wang *et* Li, sp. nov. and *Eonympha basiprojecta* Wang *et* Li, sp. nov. *Eonympha hesperanthes* (Meyrick), comb. nov. is transferred from the genus *Erotis* to the present genus. The photographs of the new species and the transferred species are provided. A key to all the described species in the world is given.

Key words: Lepidoptera; Oecophoridae; *Eonympha*; new species; new combination

Eonympha is a small oecophorid genus consisting of three species, which were described respectively from China (Meyrick, 1935; Wang and Zheng, 2000) and Sri Lanka (Meyrick, 1906). The present paper reports two new species from China and transfers one species recorded in Zimbabwe from *Erotis* to the present genus. Counting the two new species described in this paper, six species of *Eonympha* have been recorded worldwide by far.

The type specimens of the new species are preserved in the Department of Biology, Nankai University, Tianjin, China.

Abbreviations

BMNH: The Natural History Museum, London, England

TM: Transvaal Museum, Pretoria, South Africa

DBNU: Department of Biology, Nankai University, Tianjin, China

Eonympha Meyrick

Eonympha Meyrick, 1906. *Journ. Bombay Nat. Hist. Soc.*, 17: 406.

Type species: *Eonympha erythrozona* Meyrick, 1906.

Diagnosis: Small to median size. Head with appressed scales. Antenna as long as or slightly shorter than forewing, filiform, scape with pecten. Labial palpus long, second segment somewhat rough towards apex, third segment as long as second. Hind tibia covered with long hairs. Wings elongate, costa gently arched. Forewing with M_3 absent, R_4 and R_5 stalked, R_5 reaching apex; hindwing with M_3 absent, M_1 and R_s rather approximated.

Male genitalia: Uncus large and broad. Tegumen much shorter than uncus. Gnathos with long and thin arms, apex pointed. Valva moderate, with a hairy process at base near ventral margin. Transtilla present. Vinculum narrow-banded. Aedeagus curved, weakly

sclerotized.

Female genitalia: Papillae anales short and broad. Ductus bursae long, with loose coils. Signa two, with larger sclerotized base.

Distribution: China, Sri Lanka, Zimbabwe.

Key to species of *Eonympha* Meyrick in the world

1. Forewing without distinct median fascia, but with a rather thick purple blackish-sprinkled streak extending along posterior third of costa round apex and upper part of termen *E. hesperanthes* (Meyrick)
Forewing with distinct median fascia 2
2. Median fascia from costa reaching posterior margin 3
Median fascia from costa not reaching posterior margin 5
3. Valva in male genitalia not expanded, but obviously narrowed from base toward apex *E. erythrozona* Meyrick
Valva in male genitalia somewhat expanded 4
4. Costa concave at base and near apex, ventral margin strongly projected at base and greatly concave inward at about 1/3 *E. basiprojecta* sp. nov.
Costa not concave near apex but gently oblique to apex, ventral margin slightly arched but not obviously projected *E. chelonina* Wang *et* Zheng
5. Forewing with basal streak extending from costal 1/3 to beyond 2/5 of posterior margin; signa with basal plate being equilateral triangle in female genitalia *E. fanjingshana* sp. nov.
Forewing with basal streak from base beneath costa to 1/4, then straight across wing to posterior margin; signa with basal plate roughly triangular, slightly concave in two margins in female genitalia *E. retrolapsa* Meyrick

Systematics

1 *Eonympha erythrozona* Meyrick, 1906

Eonympha erythrozona Meyrick, 1906. *Journ. Bombay Nat. Hist. Soc.*, 17: 407; Clarke, 1963, Catalogue of the Type Specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick, 4: 201, pl. 97, figs. 1–1d.

Type material: Lectotype ♂, Matale, Ceylon, X. (19)04, coll. J. P(ole), genitalia slide no. 9082, BMNH [examined].

Distribution: Sri Lanka.

2 *Eonympha hesperanthes* (Meyrick, 1921) comb. nov. (Figs. 1 – 3)

Erotis hesperanthes Meyrick, 1921. *Ann. Transv. Mus.*, 8: 102.

Adult: As shown in Figs. 1 – 2.

Female genitalia: As shown in Fig. 3a,b.

Type material: Holotype ♀, Zimbabwe: Umtali, Rhod, 3. I. (19)18, A. J. T. Janse, type no. 788, TM [examined].

Distribution: Zimbabwe (Rhod).

Remarks: *Eonympha hesperanthes* (Meyrick) is closely related to the members of *Eonympha* Meyrick in both external and genital structures: the costal margin of the forewing is gently arched and the third segment of the labial palpus is as long as the second; ductus bursae is extremely long and has a number of loose

coils, and two large similar signa are present in the female genitalia. Having examined the type specimen deposited in the Transvaal Museum, Pretoria, South Africa, here we transfer *Erotis hesperanthes* Meyrick to the genus *Eonympha* Meyrick.

3 *Eonympha retrolapsa* Meyrick, 1935

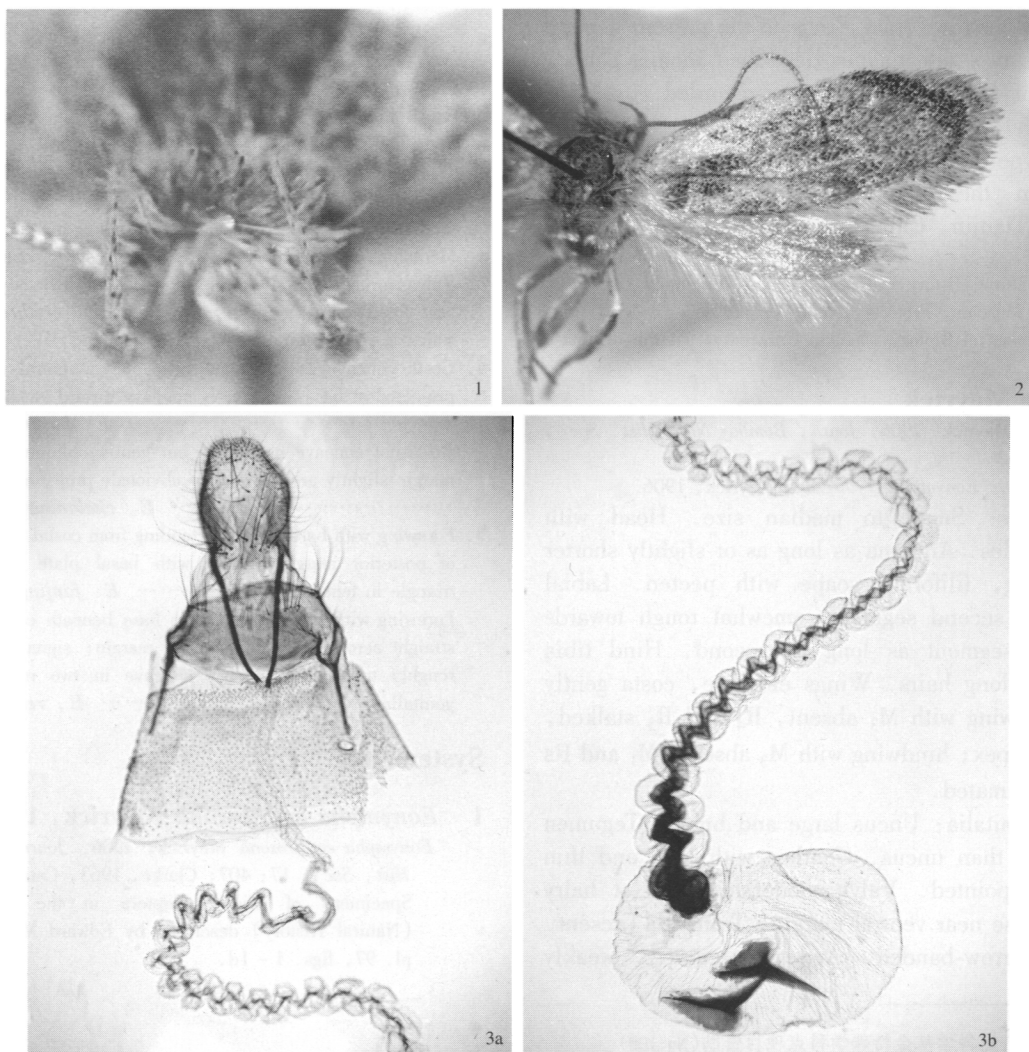
Eonympha retrolapsa Meyrick, 1935, In Caradja and Meyrick, Materialien zu einer Microlepidopteren - Fauna der chinesischen Provinzen Kiangsu, Chekiang und Hunan: 79; Clarke, 1963, Catalogue of the Type Specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick, 4: 201, pl. 97, figs. 2 – 2c.

Type material: Holotype ♀, Tien-Mu-Shan, (Zhejiang), China, C. (Caradja sent to Meyrick), VI. (19)32, (coll. Höne), genitalia slide no. 7714, BMNH [examined].

Distribution: China (Zhejiang).

4 *Eonympha chelonina* Wang et Zheng, 2000

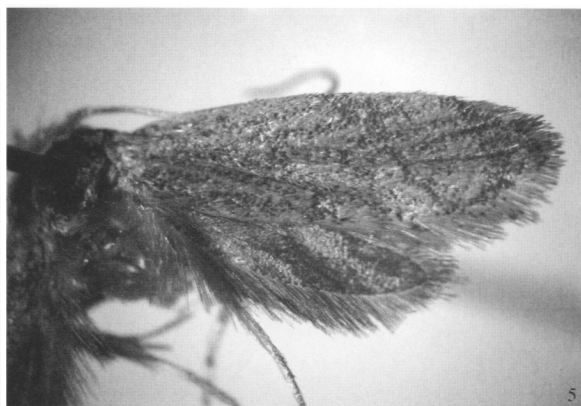
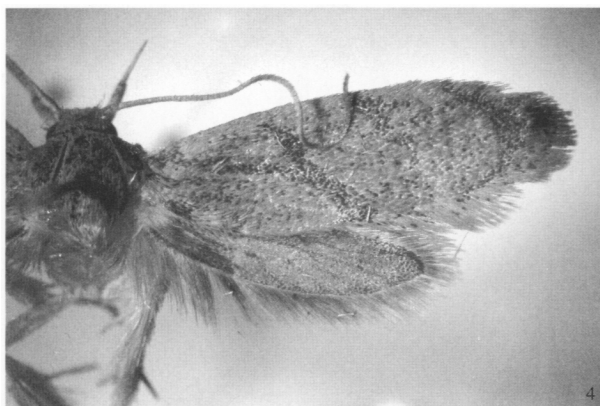
Eonympha chelonina Wang et Zheng, 2000. *Acta*



Figs. 1 – 3 *Eonympha hesperanthes* (Meyrick)

1. Head showing labial palpus; 2. Adult;

3. Female genitalia (gen. slide no. 8257): a. Ostium and genital plate; b. Bursa copulatrix showing signa.

Figs. 4–5 Adults of *Eonympha* spp.4. *Eonympha fanjingshana* Wang *et al.*, sp. nov.; 5. *Eonympha basiprojecta* Wang *et al.*, sp. nov.*Zootaxonomic Sinica*, 25(4): 432, Figs. 4–5.

Type material: Holotype ♂, China: Neixiang County (33.0°N, 111.8°E), Henan Province, alt. 1 350 m, 14. VII. 1998, leg. LI Hou-Hun; paratypes 7 ♂♂, 1 ♀, 13–15. VII. 1998, other same data as holotype; 1 ♀, Ningshan County (33.3°N, 108.3°E), Shaanxi Province, 22. VII. 1985, leg. LI Hou-Hun, DBNU [examined].

Distribution: China (Henan, Shaanxi).

5 *Eonympha fanjingshana* Wang *et al.*, sp. nov. (Figs. 4, 6–7)

Adult (Fig. 4): Wing expanse 18.0 mm. Head yellowish white, frons with shining luster, posterior area loosely with tip-brown scales, especially in female. Antenna whitish yellow, ciliated; scape mixed with brown scales on dorsal surface. Labial palpus whitish yellow, with sporadic brown scales; second segment rough toward apex; third segment thin and pointed. Thorax, tegumen and forewing somewhat ochreous yellow, with dense brown scales. Forewing elongate, costa slightly arched, apex round-pointed; an indistinct brown streak from base of costal margin oblique downward to 1/3 at middle; three brown fasciae present: first one extending from costal 1/3 to beyond 2/5 of posterior margin; second one not reaching posterior margin, just from costal 3/5 to end of cell; third one near apex, from costal margin gradually widened to near posterior margin, then gradually narrowed to tornus. Cilia orange yellow. Hindwing and cilia deep gray, cilia tinged grayish white around apex. Fore leg with femur black on ventral surface, pale whitish yellow on dorsal surface; tibia and tarsus ochreous yellow on ventral surface, with scattered black scales, somewhat paler on dorsal surface. Mid and hind legs yellowish white, not obviously tinged light brown.

Male genitalia (Fig. 6a,b): Uncus with basal 2/5 nearly parallel-sided, slightly broadened at 2/5, then a little narrowed toward apex; apex rounded. Gnathos slender, curved, pointed at apex, lateral arms about 2/

3 of its length. Valva relatively short, only slightly longer than uncus; costa concave at base, medial portion gently convex; apex roundly pointed; ventral margin projected at base, concave inward at about 1/3; large hairy process with naked, longer and thinner stem. Vinculum short, with anterior margin somewhat rounded. Aedeagus weakly sclerotized, curved near middle, apical portion somewhat broadened.

Female genitalia (Fig. 7a,b): Anterior apophyses slightly shorter than posterior apophyses, somewhat enlarged at base. Ductus bursae extremely long, with a number of loose coils. Bursa copulatrix very large. Two signa long, heavily sclerotized, isocles triangle in shape, with longer margin dentate; basal plate more or less equilateral triangle.

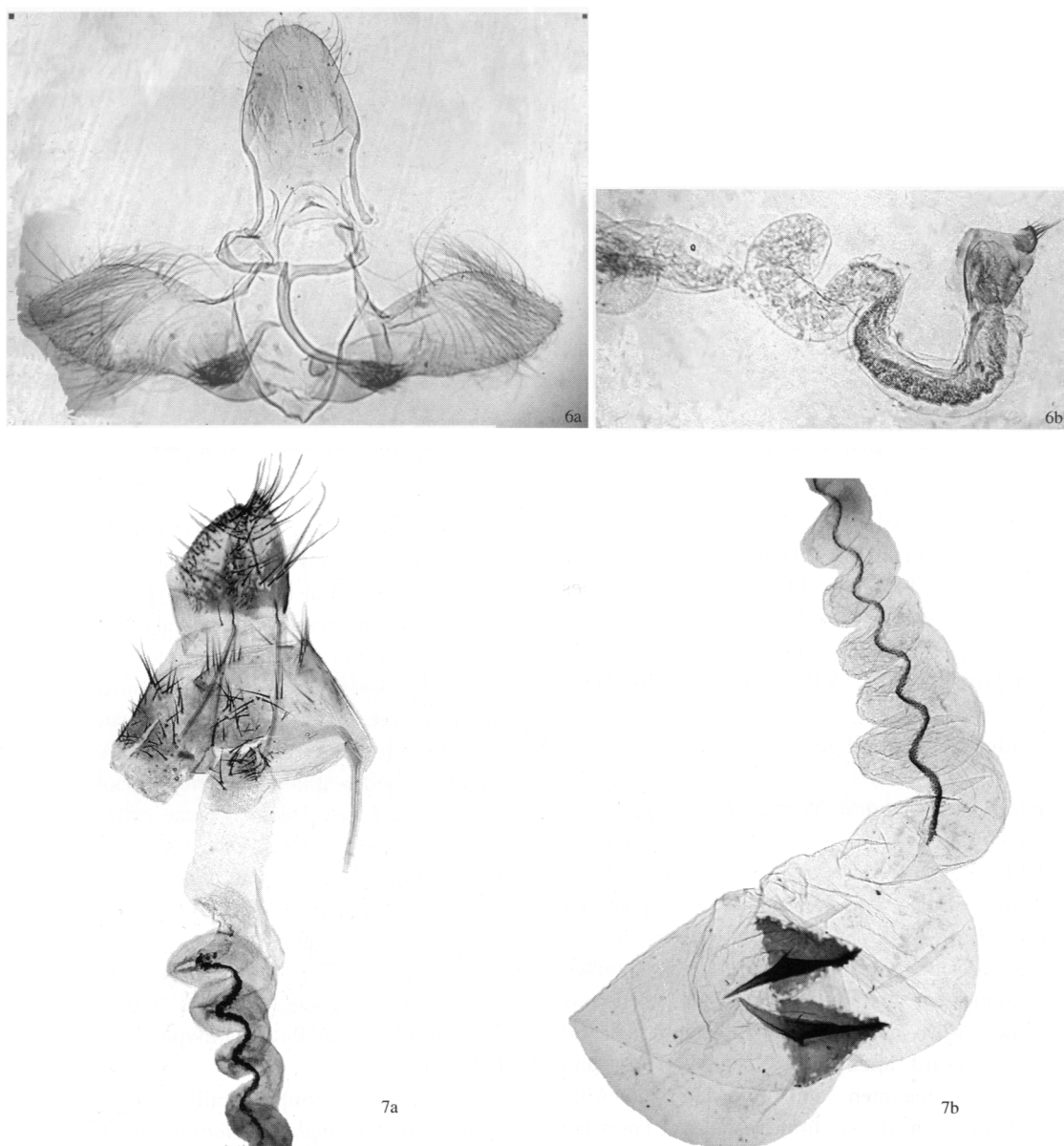
Holotype ♂, China: Mt. Fanjing (27.9°N, 108.6°E), Guizhou Province, 530 m, 3. VI. 2002, leg. WANG Xin-Pu; paratype 1 ♀, same data as holotype.

Diagnosis: Superficially, this new species is similar to *Eonympha chelonina* Wang *et al.* Zheng, but can be separated from the latter by forewing with costal margin not pink ochreous, median fascia not reaching posterior margin; hairy process at base of valva near ventral margin with longer and thinner stem in the male genitalia; basal plate of signa being equilateral triangle in the female genitalia.

Etymology. The specific name refers to the type locality of the species (Mt. Fanjing).

6 *Eonympha basiprojecta* Wang *et al.*, sp. nov. (Figs. 5, 8)

Adult (Fig. 5): Wing expanse 15.0 mm. Head shining white, posterior area with loose scales. Antenna whitish yellow, ciliated; scape mixed with brown scales on dorsal surface. Second segment of labial palpus with outside grayish yellow, mixed with dense brown scales, inside whitish yellow; third segment missing. Thorax and tegumen brown, apex with orange yellow scales. Forewing elongate, pale ochreous yellow, densely with



Figs. 6–7 *Eonympha fanjingshana* Wang et Li, sp. nov.

6a. Male genitalia with aedeagus removed; 6b. Aedeagus (gen. slide no. W01263).

7a. Ostium and genital plate; 7b. Bursa copulatrix showing signa (gen. slide no. W03024).

brown scales and tinged rose color, brown scales denser along upper margin of fold; costa gently arched, apex rounded; fasciae brown: first fascia extending from costal 1/3 to beyond 2/5 of posterior margin; second from beyond costal 3/5 reaching near tornus, with anterior portion widest; apical fascia somewhat an triangular blotch. Hindwing and cilia deep gray. Fore leg pale whitish yellow on dorsal surface; coxa and femur blackish gray on ventral surface; tibia and tarsus grayish yellow on ventral surface, mixed with dense blackish brown scales. Mid and hind legs yellowish white, tarsi tinged light brown.

Male genitalia (Fig. 8a, b): Uncus narrow at base, gradually widened to about 3/5, then gently narrowed toward apex; apex rounded. Gnathos much

curved, apex pointed. Valva with apex roundly pointed; costa concave at base and near apex, medial portion prominent; ventral margin obviously projected at base, greatly concave inward at about 1/3; large hairy process with medial portion widest. Transtilla well defined. Vinculum with anterior margin somewhat rounded. Juxta more or less triangularly shaped, with small rounded lateral lobe at about middle of each side. Aedeagus long and gently curved, with spine-like contents inside.

Female: Unknown.

Holotype ♂, China: Wufeng (30.2°N, 110.6°E), Hubei Province, 530 m, 11. VII. 1999, leg. LI Hou-Hun.

Diagnosis. The new species is closely allied to

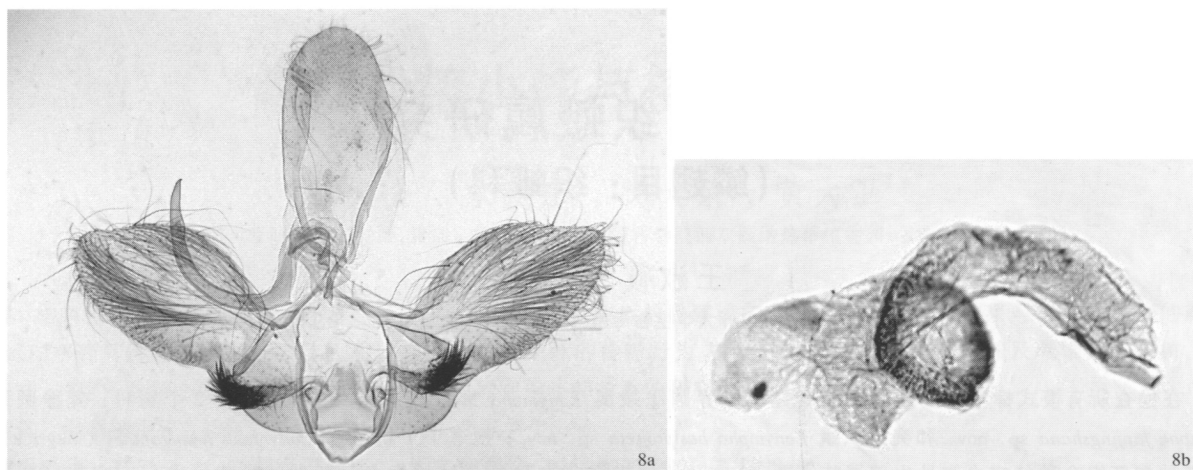


Fig. 8 *Eonympha basiprojecta* Wang *et* Li, sp. nov.

8a. Male genitalia with aedeagus removed; 8b. Aedeagus (gen. slide no. W00292).

Eonympha chelonina Wang *et* Zheng, but can be distinguished from the latter by the following characters: costal margin of forewing not pink ochereous; valva with costa concave near apex, ventral margin obviously projected at base in the male genitalia.

Etymology. This specific name is derived from the Latin *basi-* (base) and *projectus* (projected), in reference to the ventral margin of valva.

Acknowledgements We are most grateful to Dr. K. Sattler of the British Natural Museum, London (BMNH) for his kind help in providing the type specimens of *Eonympha erythrozona* Meyrick and *Eonympha retrolapsa* Meyrick for our study. We also feel indebted to Dr. Barbara Dombrowsky of the Transvaal Museum, Pretoria (TM) for the loan of the type species of *Eonympha hesperanthes* (Meyrick).

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世界圆织蛾属研究 (鳞翅目: 织蛾科)

王淑霞, 李后魂

(南开大学生物学系, 天津 300071)

摘要: 在检查所有模式标本的基础上系统研究了世界圆织蛾属 *Eonympha* Meyrick 共 6 种, 其中记述 2 个新种: 梵净圆织蛾 *Eonympha fanjingshana* sp. nov. 和突圆织蛾 *Eonympha basiprojecta* sp. nov.; 报道了 1 新组合 *Eonympha hesperanthes* (Meyrick); 提供了新种和新组合种的成虫和外生殖器特征图; 给出了该属世界已知种的分种检索表。新种的模式标本保存在南开大学生物系。

关键词: 鳞翅目; 织蛾科; 圆织蛾属; 新种; 新组合

中图分类号: Q969 **文献标识码:** A **文章编号:** 0454-6296(2004)01-0093-06

新种简述

梵净圆织蛾, 新种 *Eonympha fanjingshana* Wang et Li, sp. nov. (图 4, 6~7)

翅展 18.0 mm。

正模♂, 贵州梵净山(27.9°N, 108.6°E), 530 m, 2002. VI. 3, 王新普采, 玻片号 W01263; 副模 1♀, 采集资料同正模, 玻片号 W03024。

该新种与龟圆织蛾 *Eonympha chelonina* Wang et Zheng 相似, 但新种前翅前缘不为粉赭色, 中带不达后缘; 雄性外生殖器抱器瓣基部近腹缘的具毛突起基柄长而细; 雌性囊突为等腰三角形, 基板为等边三角形。

突圆织蛾, 新种 *Eonympha basiprojecta* Wang et Li, sp. nov. (图 5, 8)

翅展 15.0 mm。

正模♂, 湖北五峰(30.2°N, 110.6°E), 530 m, 1999. VII. 11, 李后魂采, 玻片号 W00292。

新种与龟圆织蛾 *Eonympha chelonina* Wang et Zheng 相似, 但前翅前缘不为粉赭色; 雄性抱器背近端部凹入, 抱器瓣腹缘基部明显突出, 可与后者区别。

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